

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Keiiti Ogura et al.                      Art Unit : Unknown  
Serial No. : Unassigned                              Examiner : Unknown  
Filed : October 1, 2001  
Title : LIGHT EMITTING DEVICE

Commissioner for Patents  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

Prior to examination, please amend the application as follows:

In the claims:

**Amend claims 1, 3, 4, 6, 8-10, 12, 14, 15, 18, 20, 21, 23-25, 27, 30, 31, 33, 39, 40, 42, 47, 48 and 50-55 as follows:**

1. (Amended) A light emitting device comprising:  
a substrate;  
an EL element formed over the substrate; and  
an absorption film formed over the EL element;  
wherein the EL element is interposed between the substrate and the absorption film.
3. (Amended) A device according to claim 1, wherein the absorption film comprises an alkaline-earth metal.
4. (Amended) A device according to claim 1, wherein the absorption film has a thickness of 1 to 3  $\mu\text{m}$ .
6. (Amended) A light emitting device comprising:  
a first substrate;  
an EL element formed over the first substrate;  
an absorption film formed over the EL element; and  
a sealing substrate connected to the first substrate through a sealant;

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wherein the EL element is provided in a space surrounded by the first substrate, the sealant, and the sealing substrate.

8. (Amended) A device according to claim 6, wherein the absorption film comprises an alkaline-earth metal.

9. (Amended) A device according to claim 6, wherein the absorption film has a thickness of 1 to 3  $\mu\text{m}$ .

10. (Amended) A device according to claim 6, wherein the sealant is not overlapped with the absorption film.

12. (Amended) A light emitting device comprising;  
a substrate;  
an EL element formed over the substrate, the EL element comprising an anode, an EL layer, and a cathode; and  
an absorption film formed over the cathode;  
wherein the EL element is interposed between the substrate and the absorption film.

14. (Amended) A device according to claim 12, wherein the absorption film comprises an alkaline-earth metal.

15. (Amended) A device according to claim 12, wherein the absorption film has a thickness of 1 to 3  $\mu\text{m}$ .

18. (Amended) A light emitting device comprising:  
a substrate;  
a TFT formed over the substrate;  
an EL element electrically connected with the TFT; and

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an absorption film formed over the EL element;  
wherein the EL element is interposed between the substrate and the absorption film.

20. (Amended) A device according to claim 18, wherein the absorption film comprises an alkaline-earth metal.

21. (Amended) A device according to claim 18, wherein the absorption film has a thickness of 1 to 3  $\mu\text{m}$ .

23. (Amended) A light emitting device comprising:  
a substrate;  
an EL element formed over the substrate; and  
an inorganic hygroscopic film formed over the EL element for absorbing moisture;  
wherein the EL element is enclosed by the substrate and the inorganic hygroscopic film.

24. (Amended) A device according to claim 23, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

25. (Amended) A device according to claim 23, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$ .

27. (Amended) A light emitting device comprising:  
a first substrate;  
an EL element comprising an organic light emitting layer formed over the first substrate;  
a barrier film covering the EL element;  
an inorganic hygroscopic film formed over the barrier film wherein the barrier film is interposed between the inorganic hygroscopic film and the EL element.

30. (Amended) A device according to claim 27, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

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31. (Amended) A device according to claim 27, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$ .

33. (Amended) A light emitting device comprising:  
a first substrate;  
an EL element comprising an organic light emitting layer formed over the first substrate;  
a barrier film covering the EL element;  
an inorganic hygroscopic film formed over the barrier film wherein the barrier film is interposed between the inorganic hygroscopic film and the EL element; and  
a second substrate opposed to the first substrate with the EL element disposed therebetween wherein a space between the first and second substrates is hermetically sealed by a sealant.

39. (Amended) A device according to claim 33, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

40. (Amended) A device according to claim 33, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$ .

42. (Amended) A light emitting device comprising:  
a first substrate;  
a plurality of switching elements formed over the first substrate, each of the switching elements comprising a thin film transistor;  
a plurality of EL elements formed over the first substrate and operationally connected to the switching elements, each of the EL elements comprising an organic light emitting layer;  
a driver circuit comprising thin film transistors formed over the first substrate;  
an inorganic hygroscopic film formed over the plurality of EL elements and the driver circuit; and

a second substrate opposed to the first substrate with the EL element disposed therebetween wherein a space between the first and second substrates is hermetically sealed by a sealant.

47. (Amended) A device according to claim 42, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

48. (Amended) A device according to claim 42, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$ .

50. (Amended) A method of manufacturing a light emitting device comprising the steps of:

providing a film formation apparatus;  
forming an EL layer over a substrate in the film formation apparatus; and  
forming an inorganic hygroscopic film over the EL layer in the film formation apparatus;  
wherein the substrate is prevented from contacting an air outside of the film formation apparatus after the formation of the EL layer and until the formation of the inorganic hygroscopic film is finished.

51. (Amended) A method of manufacturing a light emitting device according to claim 50, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

52. (Amended) A method of manufacturing a light emitting device according to claim 50, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$ .

53. (Amended) A method of manufacturing a light emitting device comprising the steps of:

providing a film formation apparatus having a plurality of chambers;  
forming an EL layer over a substrate in one chamber of the film formation apparatus; and

forming an inorganic hygroscopic film over the EL layer in another chamber of the film formation apparatus;

wherein the steps from forming the EL layer to forming the inorganic hygroscopic film are performed without exposing the substrate to moisture and oxygen.

54. (Amended) A method of manufacturing a light emitting device according to claim 53, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

55. (Amended) A method of manufacturing a light emitting device according to claim 53, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$ .

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REMARKS

The amendments to the claims made herein are to correct minor grammatical errors and to place the application in better form for examination. No new matter is added.

Attached is a marked-up version of the changes being made by the current amendment.

Applicants ask that all claims be examined. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: October 1, 2001

  
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**Version with markings to show changes made**

**In the claims:**

**Claims 1, 3, 4, 6, 8-10, 12, 14, 15, 18, 20, 21, 23-25, 27, 30, 31, 33, 39, 40, 42, 47, 48  
and 50-55 have been amended as follows:**

1. (Amended) A light emitting device comprising[;]:  
a substrate;  
an EL element formed over [a] the substrate; and  
an absorption film formed over the EL element;  
wherein the EL element is interposed between the substrate and the absorption film.
3. (Amended) A device according to claim 1, wherein the absorption film comprises an  
alkaline-earth metal.
4. (Amended) A device according to claim 1, wherein the [inorganic] absorption film  
has a thickness of 1 to 3  $\mu\text{m}$  [thickness].
6. (Amended) A light emitting device comprising[;]:  
a first substrate;  
an EL element formed over the first substrate;  
an absorption film formed over the EL element; and  
a sealing substrate connected to the first substrate through a sealant;  
wherein the EL element is provided in a space surrounded by the first substrate, the  
sealant, and the sealing substrate.
8. (Amended) A device according to claim 6, wherein the absorption film comprises an  
alkaline-earth metal.
9. (Amended) A device according to claim 6, wherein the [inorganic] absorption film has  
a thickness of 1 to 3  $\mu\text{m}$  [thickness].

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10. (Amended) A device according to claim 6, wherein the sealant is not overlapped with the **[inorganic] absorption film**.

12. (Amended) A light emitting device comprising;  
a substrate;  
an EL element formed over the substrate, the EL element comprising an anode, an EL layer, and a cathode; and  
an absorption film formed over the cathode;  
wherein the EL element is interposed between the substrate and the absorption film.

14. (Amended) A device according to claim 12, wherein the absorption film comprises an alkaline-earth metal.

15. (Amended) A device according to claim 12, wherein the **[inorganic] absorption film** has a thickness of 1 to 3  $\mu\text{m}$  **[thickness]**.

18. (Amended) A light emitting device comprising[;]:  
a substrate;  
a TFT formed over the substrate[,];  
an EL element electrically connected with the TFT; and  
an absorption film formed over the EL element;  
wherein the EL element is interposed between the substrate and the absorption film.

20. (Amended) A device according to claim 18, wherein the absorption film comprises an alkaline-earth metal.

21. (Amended) A device according to claim 18, wherein the **[inorganic] absorption film** has a thickness of 1 to 3  $\mu\text{m}$  **[thickness]**.

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23. (Amended) A light emitting device comprising[;]:  
a substrate;  
an EL element formed over [a] the substrate; and  
an inorganic hygroscopic film formed over the EL element for absorbing moisture;  
wherein the EL element is enclosed by the substrate and the inorganic hygroscopic film.

24. (Amended) A device according to claim 23, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

25. (Amended) A device according to claim 23, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$  [**thickness**].

27. (Amended) A light emitting device comprising:  
a first substrate;  
an EL element comprising an organic light emitting layer formed over [a] the first substrate;  
a barrier film covering the EL element;  
an inorganic hygroscopic film formed over the barrier film wherein the barrier film is interposed between the inorganic hygroscopic film and the EL element.

30. (Amended) A device according to claim 27, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

31. (Amended) A device according to claim 27, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$  [**thickness**].

33. (Amended) A light emitting device comprising:  
a first substrate;  
an EL element comprising an organic light emitting layer formed over [a] the first substrate;

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a barrier film covering the EL element;  
an inorganic hygroscopic film formed over the barrier film wherein the barrier film is interposed between the inorganic hygroscopic film and the EL element; and  
a second substrate opposed to the first substrate with the EL element disposed therebetween wherein a space between the first and second substrates **[are]** is hermetically sealed by a sealant.

39. (Amended) A device according to claim 33, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

40. (Amended) A device according to claim 33, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$  **[thickness]**.

42. (Amended) A light emitting device comprising:  
a first substrate;  
a plurality of switching elements formed over the first substrate, each of the switching elements comprising a thin film transistor;  
a plurality of EL elements formed over the first substrate and operationally connected to the switching elements, each of the EL elements comprising an organic light emitting layer;  
a driver circuit comprising thin film transistors formed over the first substrate;  
an inorganic hygroscopic film formed over the plurality of EL elements and the driver circuit; and  
a second substrate opposed to the first substrate with the EL element disposed therebetween wherein a space between the first and second substrates **[are]** is hermetically sealed by a sealant.

47. (Amended) A device according to claim 42, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

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48. (Amended) A device according to claim 42, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$  [**thickness**].

50. (Amended) A method of manufacturing a light emitting device comprising the steps of:

providing a film formation apparatus;  
forming an EL layer over a substrate in the film formation apparatus; and  
forming an inorganic hygroscopic film over the EL layer in the film formation apparatus;  
wherein the substrate is prevented from contacting an air outside of the film formation apparatus after the formation of the EL layer and until the formation of the inorganic hygroscopic film is finished.

51. (Amended) A method of manufacturing a light emitting device according to claim 50, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

52. (Amended) A method of manufacturing a light emitting device according to claim 50, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$  [**thickness**].

53. (Amended) A method of manufacturing a light emitting device comprising the steps of:

providing a film formation apparatus having a plurality of chambers;  
forming an EL layer over a substrate in one chamber of the film formation apparatus; and  
forming an inorganic hygroscopic film over the EL layer in [**an**] another chamber of the film formation apparatus;

wherein the steps from forming the EL layer to forming the inorganic hygroscopic film are performed without exposing the substrate to moisture and oxygen.

54. (Amended) A method of manufacturing a light emitting device according to claim[12] 53, wherein the inorganic hygroscopic film comprises an alkaline-earth metal.

55. (Amended) A method of manufacturing a light emitting device according to claim[12] 53, wherein the inorganic hygroscopic film has a thickness of 1 to 3  $\mu\text{m}$  [**thickness**].

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